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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,945	09/19/2003	Daniel S. Eichorn	DP-308644	7095
22851	7590	01/14/2005	EXAMINER	
DELPHI TECHNOLOGIES, INC.			VU, HIEN D	
M/C 480-410-202			ART UNIT	
PO BOX 5052			PAPER NUMBER	
TROY, MI 48007			2833	

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/666,945

Applicant(s)

EICHORN ET AL.

Examiner

Hien D. Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) 12-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 20-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/18/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. Applicant's election of species 1, figs. 1-4, claims 1-11 and 20-25, in paper dated 10/4/04 is acknowledged.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

3. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 7-10, 20-22, 24 & 25 are rejected under 35 U.S.C. 102(b) as being anticipated by McCoy et al.

The disclosure of McCoy provides a complete response to each and every element set forth in the claims. For example, figs. 2, 3, 6-9 show a circuit board substrate 20 having a first surface and a second surface, a through hole 34, a first conductive pad disposed on the first surface, a conductive terminal 31 having a first end and a second end exposed from the first and second surfaces and a conductive bonding agent 57.

As to claim 2, a conductive plating in the through hole and being electrically connected with the bonding agent.

As to claim 3, a bottom conductive pad is read as the recited second conductive pad.

As to claim 4, the conductive bonding agent comprising solder.

As to claim 5, a dielectric housing 21 having a body with at least one stand off 39 mounted on the first surface.

As to claims 7-10, the features of these claims are substantially similar as claims 1-5, therefore they are rejected under the similar rationale.

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As to claims 20-22 and 24-25, the claims recite method steps substantially corresponding to the connector of claims 1-5, therefore, they are rejected under the similar rationale.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy et al.

In absence of any showing of criticality by the applicant, to form the first and second ends to be extended at least 2mm beyond the first and second surface of the circuit board would have been an obvious of modification since such change solves no stated problem.

As to claim 23, the step of placing a stencil over the through hole prior to the step of placing a conductive bonding agent is old and well known in the art as disclosed in the specification, therefore it would have been obvious to use such step in the connector of McCoy, in order to achieve better connection for the conductive terminal.

7. Lovendusky, Kirayoglu, Kosayanagi et al, Seideler and Vicich et al are cited for disclosure of electrical connector having pins extending into a circuit board.

8. Any inquiry concerning this communication should be directed to Hein D. Vu at telephone number (571) 272-2016.

Vu/ds

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01/04/05

A handwritten signature in black ink, appearing to read "Hien Vu". The signature is fluid and cursive, with a long horizontal stroke at the beginning.

**HIEN VU**  
**PRIMARY EXAMINER**